

REMARKS:

Claims 1 –11, 15 and 16 are pending and stand rejected.

Claim 1 has been amended to cite: “methyl methacrylate monomer units, wherein said methyl methacrylate units are at least 60 percent syndiotactic”. This amendment is support by original disclosure on page 3, paragraph [001].

It is believed that no new matter has been added by the amendments.

35 U.S.C. §112

Claim 6 stands rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Specifically the Examiner believes that Applicant’s claimed block having predominantly syndiotactic methyl methacrylate at a level greater than 60% syndiotactic is not enabled. Applicant disagrees. One of skill in the art would know how to manipulate the reaction conditions to control the level of syndiotacticity in the polymer block to form a block polymer with one block having 60% or more syndiotactic MMA.

Claims 1-11, 15 and 16 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically,

- a) In claim 1 it is not clear what is meant by a block that is “partially” composed of PMMA – as additional monomer would result in a copolymeric block comprising methyl methacrylate, not PMMA. Claim 1 has been amended, as suggested by the Examiner to cite MMA monomer units, rather than PMMA.
- b) The term “short” as appears in claim 5 is subjective, and therefore unclear. Applicant has amended claim 5 to instead recite “methyl methacrylate” which is defined as a short chain alkylacrylate in [0030].
- c) The Examiner contends that claim 10 recites “polyamides”, though “polyamides” is the subject of claim 1. Applicant respectfully disagrees. The “polyamide composition” of claim 1 is a polyamide that contains at least a block copolymer additive having an elastomeric block and an MMA-containing block polymer. The alloy of claim 10 is a

blend of the “polyamide composition” of claim 1, and a polyamide or polyolefin. The polyamide with which the “polyamide composition” is blended, is not modified with the block copolymer described in claim 1. Therefore the polyamide of claim 10 is not the same as the polyamide composition of claim 1. While the polyamide portion of the “polyamide composition” may be the same as the polyamide in claim 10, the “polyamide composition” of claim 1 additionally contains the described block copolymer.

Non-statutory Double Patenting Rejection

Claims 1, 2, 5, 6, 7-11, 15 and 16 stand provisionally rejected on the ground of nonstatutory obviousness-type double patenting, as being unpatentable over claims 1-30 of copending Application No 10/502,216.

Applicant plans to execute a terminal disclaimer over Application No 10/502,216, if and when the claims are allowed.

Summary of the Invention:

Applicant has conducted research to find a polyamide-based thermoplastic composition, impact reinforced by a simple and inexpensive means, easy to implement, and not requiring the addition of a compatibilizing agent. Applicant has found that certain block copolymers, although immiscible with polyamides, can effectively reinforce them. Specifically blends based on a polyamide and on a block copolymer having at least one functionalized or nonfunctionalized PMMA block, syndiotactic to a level of greater than 60%, and at least one block with an elastomeric nature exhibit excellent thermomechanical properties although the constituents of the blends are completely immiscible. These compositions exhibit excellent mechanical behavior at low temperature and at high temperature and introduce an effective solution to the problem set out above. (Page 3, [0010] and [0011] of the Substitute Specification)

35 U.S.C. §103(a)

Ruzette et al.

Claims 1, 2, 5, 6, 7-11, 15 and 16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ruzette et al. (US 2006/0063891). The Ruzette reference is owned 100

percent by Applicant, and has been terminally disclaimed. Additionally, The ‘891 reference fails to teach or suggest all of Applicant’s claim limitations, and thus fails to present a *prima facie* case of obviousness. Specifically, the Ruzette reference fails to teach or suggest a block copolymer in having methyl methacrylate monomer units, wherein said methyl methacrylate units are at least 60 percent syndiotactic.

Kakeda et al.

Claims 1-11, 15 and 16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kakeda et al. (WO 200292696) (US 2004/0147674). The WO ‘696 reference fails to teach or suggest all of Applicant’s claim limitations, and thus fails to present a *prima facie* case of obviousness. Specifically, the Kakeda reference fails to teach or suggest a block copolymer in having methyl methacrylate monomer units, wherein said methyl methacrylate units are at least 60 percent syndiotactic.

The Kakeda reference describes a thermoplastic resin (could be a polyamide) containing as an impact modifier a block copolymer having a methacrylic polymer block and an acrylic polymer block. The methacrylic polymer block is described in [0078] to[0082]. There no mention of tacticity. Since the tacticity and its relationship to compatibility of the block copolymer with polyamide are not recognized as result-effective, they cannot be optimized by routine experimentation. Since the Kakeda reference fails to teach or suggest Applicant’s claim limitations, as amended, there is no *prima facia* case of obviousness presented.

Tsuji et al.

Claims 1-11, 15 and 16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Tsuji et al. (WO 200281561) (US 2004/0106732). The ‘891 reference fails to teach or suggest all of Applicant’s claim limitations, and thus fails to present a *prima facie* case of obviousness. Specifically, the Tsuji reference fails to teach or suggest a block copolymer in having methyl methacrylate monomer units, wherein said methyl methacrylate units are at least 60 percent syndiotactic.

The Tsuji reference describes a method for producing a block copolymer having a methacrylic polymer block and an acrylic polymer block. The methacrylic polymer block is described in [0083]. There no mention of tacticity. Since the tacticity and its relationship to

compatibility with polyamide are not recognized as result-effective, they cannot be optimized by routine experimentation. Since the Tsuji reference fails to teach or suggest Applicant's claim limitations, as amended, there is no *prima facia* case of obviousness presented.

Moreover, polyamides are mentioned only as one component of a large list of thermoplastics, of which no polyamide is used in the over 60 examples. There is no teaching or suggestion in the Tsuji reference to motivate one in the art to practice an impact modified polyamide having a block copolymer in having methyl methacrylate monomer units, wherein said methyl methacrylate units are at least 60 percent syndiotactic.

In view of the above, the Applicant believes that the reasons for rejection have been overcome, and the claims herein should be allowable to the Applicant. Accordingly, reconsideration and allowance are requested.

Respectfully submitted;

  
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